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Species

Diversity of species: a perspective

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1. INTRODUCTION

The diversity of species on Earth is incredible. There are more than 1.7 million species that have been discovered. Many species of plants and animals have evolved to depend on one another. For example, some plants can only be pollinated by a certain kind of bird or insect. In relationships like these, if one species becomes extinct, the other species could too. The complex relationships between species are often disturbed when organisms are transported to new places or a new element is introduced. This can be by accident or on purpose. Sometimes they compete with species that are already there or they prey on them. It is also possible that they may have no effect on the native species.

2. GENETIC DIVERSITY

Genetics make individuals of the same species different from each other. It is important for groups of plants and animals, including people, to have genetic diversity. It allows groups to adapt to changes in their environment. A larger group has more genetic diversity. This group will be stronger and better able to adapt to change. Biodiversity, is the term used to describe the variety of life found on Earth and all of the natural processes. This includes ecosystem, genetic and cultural diversity, and the connections between these and all species.

3. THREATS TO BIODIVERSITY

Climate change is a major threat to biodiversity. Climate change affects air and ocean temperatures, the length of seasons, sea levels, the pattern of ocean and wind currents, levels of precipitation, as well as other things. These changes affect the habitats and behaviour of many different species. Many will not be able to adapt fast enough and may become extinct. Human activities are responsible for most of the loss in biodiversity throughout the world. With an increasing population, we are consuming more and more natural resources. Many species from around the world are threatened because of over-exploitation, pollution and habitat conversion.

4. SIGNIFICANCE OF SPECIES DIVERSITY

The composition of species in a given ecosystem is the result of long lasting evolution. Each species has adapted to its own niche, which enable the species to reproduce and thus maintain its population. Living in an ecosystem, the species interacts with its environment and thus performs certain functions (increasing the light availability for plant growth, preventing sediment erosion). In a natural state, these interactions and consequently the system is in balance. The loss of one species affects many other species and causes imbalance. As a result, several functions within and of the system are not carried out any more. Any species that will take over the lost specie's niche will most certainly not replace all of the functions it used to perform. When species get extinct, their services for the global biosphere are lost forever. It is impossible to replace it.

5. CONSERVATION

Preserving species and their habitats is important for ecosystems to self-sustain themselves. Numerous successful conservations measures supporting biodiversity, the 2010 biodiversity target has not been met at the global level. Conservation of ecosystems and the species within them would help to maintain the natural balances disrupted by recent human activity. A report from the global conservation organization, WWF, has suggested that since 1970 the pressure we exert on the planet has almost doubled and the natural resources upon which we depend have declined by more than 33%. Positive actions were taken to improve conservation and commercial trades should be prohibited.

6. THE BIOLOGICAL DIVERSITY ACT 2002

The Act covers conservation, use of biological resources and associated knowledge occurring in India for commercial or research purposes or for the purposes of bio-survey and bio-utilisation. It provides a framework for access to biological resources and sharing the benefits arising out of such access and use. The Act also includes in its ambit the transfer of research results and application for intellectual property rights (IPRs) relating to Indian biological resources. The Act covers foreigners, non-resident Indians, body corporate, association or organization that is either not incorporated in India or incorporated in India with non-Indian participation in its share capital or management. These individuals or entities require the approval of the National Biodiversity Authority when they use biological resources and associated knowledge occurring in India for commercial or research purposes or for the purposes of bio-survey or bio-utilisation.

Reshma M,
Diversity of species: a perspective,
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